

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and the reasons that follow. Claims 1-8 stand rejected. Claims 9-12 have been added. No new matter has been added. Claims 1-12 will be pending in the present application upon entry of this Reply.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 1-5 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Quist (U.S. Patent No. 4,410,610) in view of Adams (U.S. Patent No. 4,859,547). Claims 4 and 8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Quist in view of Adams and further in view of McHenry (U.S. Patent No. 5,273,845). Claims 1 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Quist in view of Adams and further in view of Dougherty (U.S. Patent No. 4,775,604). These rejections should be withdrawn, because the cited references fail to disclose, teach, or suggest the claimed invention.

For example, Quist and Adams, alone or in any proper combination with any of the other cited references, fail to disclose, teach, or suggest a “rechargeable battery having a cover” where, among other elements, “a first section of the pole shank is electrically conductively connected in a gas-tight and liquid-tight manner to the inner surface of the pole sleeve [and] a sliding element [is] provided between a second section of the pole shank and the inner surface of the pole sleeve . . . wherein the diameter of the first section is smaller than the diameter of the second section,” as recited in independent Claim 1 (as amended).

Quist is directed to a “pole bushing for batteries” and teaches using a post that contacts both a metal sleeve (1) and a sealing material (2) while maintaining a constant diameter (see Fig. 3), rather than utilizing a pole shank having a first section having a smaller diameter than a second section, as required by independent Claim 1.

Adams is directed to a “battery terminal” and teaches the use of a constant-diameter “post means 20,” rather than a pole shank having a first section having a smaller diameter than a second section, as required by independent Claim 1.

The Examiner has cited to no teaching in the prior art of a “rechargeable battery having a cover” where, among other elements, “a first section of the pole shank is electrically conductively connected in a gas-tight and liquid-tight manner to the inner surface of the pole sleeve [and] a sliding element [is] provided between a second section of the pole shank and the inner surface of the pole sleeve . . . wherein the diameter of the first section is smaller than the diameter of the second section.” Applicant submits that the only evidence of a teaching of such a feature is contained in the present application. Of course, any reliance on the present application would constitute impermissible hindsight.

As acknowledged by the Examiner in the final Office Action, “Quist . . . does not disclose wherein the diameter of the first section is smaller than the diameter of the second section.” The Examiner nevertheless stated:

It would have been an obvious matter of design choice to modify the first and second sections of the pole shank in order to provide a tighter seal, since such a modification would have involved a mere change in the size of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art.

In the Advisory Action, the Examiner maintained the rejection and further stated:

The Applicant has not established the criticality of making the pole shank with a diameter of the first section smaller than the diameter of the second section and, therefore, has not established that the differing diameters provide patentable distinction to the claimed device.

. . .

Examiner continues to stand by the fact that it would be an obvious matter of design choice to modify the first and second sections of the pole shank to create a first diameter smaller than the diameter of the second section.

Applicant respectfully disagrees with the Examiner. As stated in the MPEP, a change in shape may be “a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration [] was significant.” MPEP § 2144.04(IV)(B) (citing *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)).

Applicant submits that the configuration of the pole shank as claimed is significant and non-obvious for at least the reasons provided below.

First, because the sliding element is provided between the larger diameter second section and the inner surface of the pole sleeve, the ease with which the pole shank may be inserted into the pole sleeve is increased, as noted in paragraph [0015] of the present application: “[S]uch a configuration [] makes it relatively simple to fit a pole sleeve to a pole shank.”

Second, the claimed configuration of the pole shank reduces the possibility of damage to the pole shank and the pole sleeve because of the reduced diameter of the first section and further because of the sliding element provided between the second section and the pole sleeve, as noted in paragraph [0016] of the present application: “[S]uch [a] configuration largely avoids damage to the pole shank and/or to the pole sleeve when the pole sleeve is pushed onto the pole shank.”

Third, in contrast to other types of pole shank/pole sleeve configurations, where a conductive coupling between the members may be provided by adhesives (see paragraph [0004]) or simply by touching of the two members (see paragraph [0005]), which may provide a poor electrical connection, the smaller diameter of the first section provides an intermediate space which may be filled with solder to conductively couple the first section to the pole sleeve and provide a superior electrical connection, as noted in paragraph [0017] of the present application: “The cavity which is formed around the first section in this way is particularly preferably filled with flowing solder in order to . . . provide an electrically conductive connection between the pole sleeve and the pole shank.”

In the Advisory Action, the Examiner mentioned three patents that, as asserted by the Examiner, disclose “a post that maintains a constant diameter” (Quist, U.S. Patent No. 4,410,610), terminal posts that “have a slight upward external taper” (Lund, U.S. Patent No. 6,309,429), and a terminal post “having a wider base that attaches to [a] plate group,” (Iwamura, U.S. Patent No. 6,440,180). The Examiner appears to be relying on such references for further support of his assertion that “It would have been an obvious matter of

design choice to modify the first and second sections of the pole shank in order to provide a tighter seal.” Applicant points out that “to modify the first and second sections of the pole shank” as suggested by the Examiner would not by itself provide a tighter seal, but would require further modification, for example, as taught by the present application, where according to an exemplary embodiment, the differing diameters provide a cavity adjacent the first section within which solder may flow to seal the pole shank and the pole sleeve, providing a superior electronically conductive bond over many other types of bonds. Of course, any reliance on the present application would constitute impermissible hindsight reasoning. Applicant therefore submits that providing first and second sections of a pole shank as in Claim 1 would not have been an obvious matter of design choice.

The Applicant submits that the Examiner’s reliance on the references discussed in the Advisory Action is misplaced. For example, only one of the references, Quist, was cited by the Examiner in the rejection of Claim 1, and the Examiner acknowledged that Quist fails to disclose a second section having a larger diameter than a first section. Iwamura, in contrast to the Examiner’s assertion, likewise fails to disclose a pole shank within a pole sleeve wherein a second section of the pole shank has a greater diameter than a first section, as required by Claim 1.

Lund, also mentioned by the Examiner, may disclose a terminal shaft with a “slight upward external taper.” However, Lund is directed to providing a method of bonding battery cell posts and bushings using induction heating to at least partially melt the bushing and bond the post and the bushing. Accordingly, Lund in fact teaches away from the subject matter of Claim 1, where a “sliding element [is] provided between [the] second section of the pole shank and the inner surface of the pole sleeve,” because the sliding element recited in Claim 1 would interfere with the bonding of the post and the bushing disclosed in Lund.

Applicant submits that, for at least those reasons presented above, the configuration of the pole shank as claimed in the present application is significant and would not have been obvious to one of ordinary skill in the art at the time of the invention.

Accordingly, Applicant respectfully requests the withdrawal of the rejection of Claim 1, since at least one element of Claim 1 is not disclosed, taught, or suggested by the combination of Quist and Adams, alone or in combination with any of the other cited references. Claims 2-8 depend variously from Claim 1 and are allowable therewith, for at least the reasons set forth above, without regard to the further patentable limitations set forth in such claims. Reconsideration and withdrawal of the rejections of Claims 1-8 is respectfully requested.

New Claims 9-12

Applicant has added new Claims 9-12, which Applicant submits are allowable for at least those reasons presented below.

Claim 9 is in independent form and includes all of the limitations of independent Claim 1, which is believed to be allowable over the cited references. Claim 9 further recites “wherein the sliding element is formed from polypropylene and is configured to reduce the sliding friction between the pole shank and the pole sleeve during insertion of the pole shank into the pole sleeve,” which is not disclosed, taught, or suggested by the cited references.

Claim 10 is in independent form and recites all of the limitations of independent Claim 1, which is believed to be allowable over the cited references. Claim 10 further recites “wherein the first section and the pole sleeve are configured so that an intermediate space is formed between the first section and the pole sleeve when the pole shank is inserted into the pole sleeve,” which is not disclosed, taught, or suggested by the cited references.

Claims 11 and 12 depend from Claim 10 and are allowable therewith, for at least the reasons set forth above, without regard for the further patentable limitations set forth in such claims.

Accordingly, consideration and allowance of Claims 9-12 is respectfully requested.

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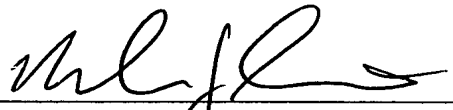
Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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